

THE EBOLA VIRUS OUTBREAK

When two American aid workers returned to the United States to be treated for Ebola, the news spread across the country, dominating headlines and creating some irrational fears. Alarms were raised at hospitals in major cities awaiting cases that inevitably would come through the emergency room doors. Since that time, there have been no reported cases of Ebola in the US nor do experts expect many to arise here in the future, even though the number of Ebola cases has soared in Africa. The difference is a question of medical geography: how does Ebola spread, how contagious is it, why is it difficult to contain, and why, despite the challenges, is the US likely to avoid the suffering Africa is experiencing?

The 2014 outbreak of Ebola is more

deadly than all the other outbreaks combined since the disease was discovered in 1976. Patient Zero was just a 2-year-old boy from Guéckédou, Guinea, who died on Dec. 6, 2013, just days after falling ill with fever, vomiting, and diarrhea. It is unknown how the child contracted the disease, but scientists believe Ebola is associated with bat drool and defecation. Bats are hunted in that area of Guinea, and as Ebola had not struck that part of Africa previously, little was known about it locally. Within a week of his death, his 3-year-old sister, mother, and grandmother were dead as well. The family's symptoms did not immediately point to Ebola but to any number of illnesses, such as the flu. Two mourners took the disease back to their village, likely due to their custom of touching the deceased as part of their grieving, while a health worker took it to a different village. An outbreak had begun even though no one recognized it until March.

Guéckédou is located near the border with Sierra Leone and Liberia, where good roads hasten the movement of people, goods, and ideas. Unfortunately, those same roads allow disease to spread more easily as well. In the past, African Ebola cases oc-

curred in isolated villages and could be contained, but improved transportation has accelerated the diffusion process. By late August, roughly 2,000 people have contracted Ebola, resulting in more than 1,000 deaths in three of Africa's poorest nations.

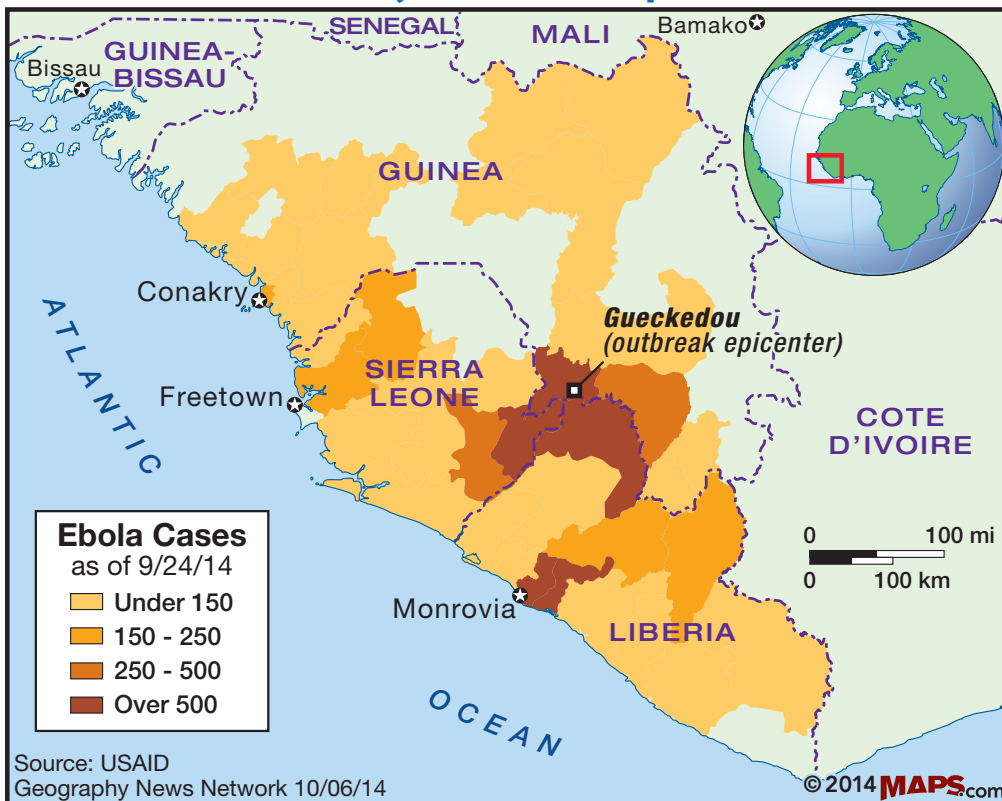
Ebola is unlike the flu in that it is not airborne. Direct contact with bodily fluids like blood, sweat, urine, feces, and vomit spreads Ebola. The majority of those who contract the virus have taken care of sick relatives, prepared the dead for burial, or worked in health care. Hospitals in countries like Guinea often lack latex gloves or running water—not surprising in a country where people live on roughly \$1 a day. Latex gloves sell for a 50 cents per pair—cheap for many developed countries, but a staggering bill for the areas infected. The virus can survive on surfaces, making hospitals involuntary spreading grounds. This has led some to blame physicians and keep sick loved ones at home, perpetuating the problem.

What makes Ebola especially difficult to contain is that symptoms do not appear until 8-10 days after exposure, which is when people become contagious. Fever, diarrhea and vomiting are followed in about half of the cases by hemorrhaging. Blood vessels deep in the body start leaking fluid, causing blood pressure to plummet which leads to organ failure.

By this point, the victim could have had contact with many people, all of whom should be isolated until they've been tested for Ebola. Then all those people the isolated individuals had contact with should be isolated as well, and so on, until there are no more cases. Because the disease had spread into so many different countries, including Nigeria, before it was recognized as Ebola, isolating those who have had contact with the sickness has been nearly impossible. The afflicted countries do not have the manpower to enact these procedures. The result is an epidemic, a widespread occurrence of infectious disease.

The epidemic has brought fear. Areas that have been closed off are facing famine as stores have closed, food

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rots in the fields of ailing farmers, and truckers are unwilling to transport food or goods into hard-hit areas. Bodies have been left unburied, which is far more of a health risk than the sick. The World Health Organization is orchestrating food drops to alleviate the suffering, and calling for worldwide support to fight this escalating problem.

In August, the State Department

called home its embassy personnel and their families from Sierra Leone, citing an inability to get health care for even the most routine health problems. While the State Department has not issued any travel warnings, the Centers for Disease Control (CDC) has warned against nonessential travel to West Africa. Standard procedures for infection control such as wearing gloves, masks, single-use needles, etc. are likely to limit the risk of infection among health

providers in the US. In addition to being far wealthier, the US is better prepared for public health emergencies. In a worst-case scenario, the CDC has the authority to quarantine Americans suspected of having dangerous, communicable diseases, whereas many African nations cannot isolate those who do not wish to be.

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QUESTIONS:

1. How does Ebola spread?
2. What makes some areas of the world more susceptible than others?
3. Should the Centers for Disease Control have the authority to quarantine? What are the pros and cons?

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